

Claims:

1. The method for preparing a antimicrobial complex useful as a mouthwash, dentifrice, coating for a dental floss, or a protective coating for teeth by a metathesis reaction between a cationic biocidal monomer or polymer with an anionic biocidal monomer or polymer.
2. The method for preparing a antimicrobial complex useful as a mouthwash, dentifrice, coating for a dental floss, or a protective coating for teeth by an acid-base reaction between a biocidal free base and a biocidal organic compound capable of donating a proton to the free base.
3. A method as defined in Claim 1 wherein the cationic monomeric biocide has an amidine, guanidine, biguanide, a protonated tertiary amine antibiotic or a quaternary functionality.
4. A method as defined in Claim 3 wherein the cationic monomeric biocide is chlorhexidine salt, cetyl pyridium halide, benzalkonium halide, sangiunarine halide, D,L-pyrrolidone carboxylic acid salt of N α -cocoyl-L-argine ethyl ether, domiphen bromide, ethanediyl- α ,w-bis (dodecyldimethyl) ammonium halide, delmopinol halide, tetracycline hydrochloride, doxycycline hydrochloride or minocycline hydrochloride.
5. A method as defined in Claim 1 wherein the cationic polymeric biocide has a amidine, guanidine, biguanide, quaternary functionality in the backbone, or side chain, or contained in dendrimers.

6. A method as defined in Claim 5 wherein the cationic polymeric biocide is Polyhexamethylene guanidine, Polyhexamethylene biguanide, or a quaternary dendrimer.
7. A method as defined in Claim 1 wherein the anionic monomeric biocide has phenolic, carboxylate, tropolone, and organophosphate, organophosphonate, or inorganic oxyphosphorus functionalities.
8. A method as defined in Claim 7 wherein the anionic monomeric biocide is triclosan, o-phenylphenol, thymol, eugenol, 4-isopropyl-tropolone, undecylenic acid, mupirocin, mono or di alkyl phosphates, ethylenediaminetetrakis (methylene-phosphonic acid), phosphate or pyrophosphate.
9. A method as defined in Claim 2 wherein the biocidal base is a tertiary amine such as sanguinarine, tetracycline, doxycycline, minocycline or delmopinol.
10. A method as defined in Claim 2 wherein the biocidal acid is undecylenic, stearic, mupirocin, or salicylic carboxylic acids.
11. A method for the preparation of a mouthwash comprising:
 - a.) from about 0.01 to about 1.5 wt. % of a biocidal complex as described in Claim 2;
 - b.) from about 0.25 to about 4.0 wt. % based on actives, and;
 - c.) optionally containing up to 20 wt. % ethanol;
 - d.) diluted to 100 wt. % with water

12. A method for the preparation of a mouthwash comprising:
 - a.) from about 0.01 to about 1.5 wt. % of diocidal complex as described in Claim 1;
 - b.) from about 0.25 to about 4.0 wt. % of a cationic, non-ionic or a betaines surfactant based on actives, and;
 - c.) optionally containing up to 20 wt. % ethanol;
 - d.) diluted to 100 wt. % with water
13. A method as defined in Claim 9 wherein the surfactants are polyalkoxylated sorbital long chain hydrocarbon esters as the non-ionic surfactants, long chain hydrocarbon amidopropyl-betaine as the amphoteric type surfactants, phospholipids as the cationic surfactants, or combinations thereof.
14. A method as defined in Claim 10 wherein the surfactants are polyalkoxylated sorbital long chain esters as the non-ionic surfactants, long chain hydrocarbon amidopropyl betaines as the amphoteric surfactants, phospholipids as the cationic surfactants or combinations thereof.
15. A method to prepare a dental floss wherein the anti-plaque complex as described in Claim 1 is present in bulk or as a coating from about 0.10 to about 10.0 wt. %.
16. A method to prepare a dental floss wherein the anti-plaque complex as described in Claim 2 is present in bulk or as a coating from about 0.01 to about 10.0 wt. %.
17. A method a preparing a dentifrice comprising a biocidal complex as described in Claim 1 in amounts of about 0.01 to about 5.00 wt. %, a solubilizing solvent in amounts of about 5.0 to about 20.0 wt. % a thickening polymer and a humectant in amounts of about 0.2 to about 10.0 wt. %, then adding a non-ionic, amphoteric, cationic or combinations thereof to form a gel.

18. A method of preparing a dentifrice comprising a biocidal complex as described in Claim 2 in amounts of about 0.01 to about 5.00 wt. %, a solubilizing solvent in amounts of about 5.0 to about 20 wt. %, a thickening polymer and a humectant in amounts of about 0.2 to about 10.0 wt. %, then adding a non-ionic, amphoteric, cationic or combinations thereof to form a gel.
19. Method of preparing a dental coating using the biocidal complexes of Claim 1 useful to protect teeth against gingivitis, caries and the build up to plaque, used in concentrations of about 1.0 to about 15.0 wt. %.
20. Method of preparing a dental coating using the biocidal complexes of Claim 2, useful to protect teeth against gingivitis, caries and the build up to plaque, used in concentrations of about 1.0 to about 15.0 wt. %.